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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. GIVEN M SUBN EQUALS LESS THAN B SUBN; SUB SET OF GREATER THAN; WHERE B SUBN IS THE TOTALITY OF ALL NONEMPTY CONVEX SETS IN N DIMENSIONAL EUCLIDEAN SPACE, SUBSET OF IS A BINARY QUOTIENT OF A THEORETICAL MULTIVARIATE INCLUSION, A MODEL. THE AUTHOR PROVES THE INSOLVABILITY OF THE ELEMENTARY THEORY OF (A) A MODEL M SUBN FOR ANY NATURAL N GREATER THAN OR EQUAL TO 2; (B) THE CLASS OF MODELS (M SUBN; N EQUALS 2, 3, 4, ...).

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SHAYAKHMETOV, T. K. S

"Insolvability of the Theory of Inclusion of Convex Sets"

Alma-Ata, Vestnik Akademii Nauk Kazakhskoy SSR; March, 1970, p 71

Abstract: Given $M_n = \langle B_n; \subseteq \rangle$; where B_n is the totality of all nonempty convex sets in n -dimensional Euclidean space, \subseteq is a binary quotient of a theoretical multivariate inclusion, a model. The author proves the insolvability of the elementary theory of (a) a model M_n for any natural $n \geq 2$; (b) the class of models $\{M_n; n = 2, 3, 4, \dots\}$.

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USSR

UDC 629.78.018.3

VLASENKOV, V. M. and SHAYDENKO, A. Ya.

"Low-Frequency Dynamic Test Units for Studying the Reliability of Gyroscopic Guidance System Assemblies and Elements"

Trudy Prepodavat. i Slushateley Tul'sk. Gor. Un-ta Nauchn. - Tekhn. Znaniy (Works of the Teachers and Auditors of the Tula Municipal University of Scientific and Technical Knowledge), 1972, No 14, pp 158-165 (from Referativnyy Zhurnal--Raketostroyeniye, No 8, 1972, Abstract No 8.41.257)

Abstract: At the present time dynamic tests under laboratory conditions are used to improve the characteristics of gyroscopic guidance systems for aviation and space crafts. As the method of physical modeling of the operational disturbing effects, these tests are the basic means of ensuring and increasing the reliability of a unit as well as an effective factor of reducing the volume of expensive and time consuming full-scale tests. Mainly, design of testing units assumes the electrohydraulic principle of vibration activation according to several independent linear and angular coordinates. As a result it was possible to model the actual disturbances of on-board guidance systems by their angular, linear and repeating constituents of acceleration in the region of the lowest frequencies with a drop in accelerations from one down
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VLASENKOV, V. M. and SHAYDENKO, A. Ya., Trudy Prepodavat. i Slushateley Tul'sk. Gor. Un-ta Nauchn.-Tekhn. Znaniy, 1972, No 14, pp 158-165

thousandths of a percent of the force of gravity. The technical characteristics of the test units are given in tables and are represented by graphs. Their dynamic capabilities were provided on the basis of analysis of actual acceleration parameters for naval tests of a gyro-stabilized unit and in the investigation of on-board instruments of aircraft and missile engineering. 2 figures, 2 bibliographical references.

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USSR

UDC: 531.383

PLATONOV, V. K., SOSHNEV, S. I., and SHAYDENKO, A. Ya.

"Double-Gyroscopic, Triaxial Stabilizer With Gyrocompass Effect"

Leningrad, Priborostroyeniye, No 1, 1972, pp 89-93

Abstract: The description is given of a device designed to solve the problem of stabilizing gravimetric and magnetometric geophysical instruments relative to a horizontal coordinate system with geographically oriented axes. These instruments are for use in a gondola towed by a ship for the purpose of investigating the gravitational and magnetic fields of the earth. The device was developed by the Hydrological Instrument Department of the Tula Polytechnical Institute, with which the authors are associated, in collaboration with the Institute of Terrestrial Magnetism, Ionosphere, and Radio Propagation, of the USSR Academy of Sciences (IZMIR AN SSSR) and the Naval Gravimetry Division of the All-Union Scientific Research Institute of Land and Sea (VNIIMORGEO). The gyrostabilizer consists of a basic Cardan suspension with two astatic gyroscopes in its frame; these gyroscopes are the sensing elements of the stabilizer indicator system. There is also a small Cardan suspension for the instrument to be stabilized. A diagram of the system is given and its theory of operation worked out.

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SHAYDENKO A. Ya.

JPRS 56236

12 June 1972

gyroscopes

UNC 531.383

MOTION OF A GYROSCOPE WITH A HOOK'S JOINT AND EXTRA ROTOR

Article by V. Ya. Raspopov, A. Ya. Shaydenko, V. I. Gorin, Ye. B. Cherkalin, Leningrad Polytechnical Institute, Leningrad, *Izvestiya Vuzovskikh Uchebnykh Zavedeniy, Priroda i Tekhnika*, No. 3, 1972, signed to press 17 November 1970, pp 75-78

The motion of a gyroscope whose flywheel is driven through a Hook's joint, equipped with an extra kinetic moment carrier, is examined in this article within the framework of precession theory.

The motion of a gyroscope whose flywheel (rotor) is driven by a Hook's joint (Arnold-Monder gyroscope) is investigated in [1, 2]. It is shown that such a gyroscope, installed on a rotating platform, the angular velocity of which is perpendicular to the input axis of the Hook's joint, possesses the property of being a high-speed gyroscope and can be classified as a rotor vibration gyroscope [2]. It is shown [2] that an extra rotor (extra kinetic moment carrier) built into the gyroscope changes the coordinates of the position of equilibrium of the gyroscope.

In connection with some of the uses to which a gyroscope with a Hook's joint is put, the character of its motion to the equilibrium position is important. This problem is solved below for such a gyroscope, installed on a fixed platform (Figure 1).

The flywheel (rotor) 2 is driven through a Hook's joint, the entrance shaft of which is denoted by the index 1, and the exit by the index 3. If we draw an analogy between the kinematics of the Hook's joint and kinematics of the free gyroscope, the frame of which rotates around the axis perpendicular to the axis of rotation of the outer frame of the suspension, we see that they are quite identical, i.e., part 1 in Figure 1 corresponds to the frame of the ordinary free gyroscope, part 4 to the outer gimbal frame, and part 3 is obviously the analog of the inner gimbal frame. Extra rotor 5 is fixed in exit shaft 3 of the Hook's hinge. That the angular rate of rotation of the rotor of the additional gyromotor (the term "extra rotor" is

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UDC: 531.883

RASPOPOV, V. Ya., ~~SHAYDENKO, A. Ya.~~, GORIN, V. I., CHEKALIN, Ye. B., Tula Polytechnical Institute

"Concerning the Problem of Motion of a Gyroscope Based on a Universal Joint With Additional Rotor"

Leningrad, Izvestiya VUZov, Priborostroyeniye, Vol 15, No 3, 1972, pp 75-78

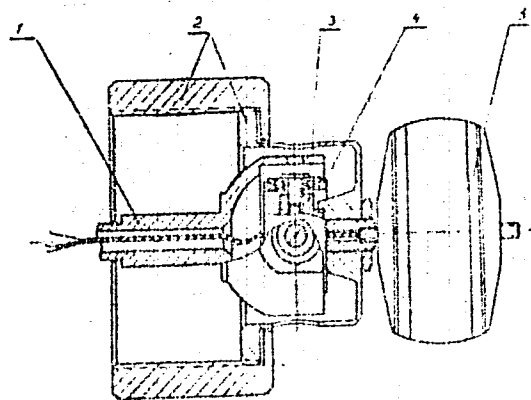
Abstract: Motion of the gyroscope shown in the figure to its equilibrium position is considered. The flywheel mass (rotor) 2 is rotated through a universal joint with input axle 1 and output axle 3. If an analogy is drawn between a kinematic universal joint and a kinematic three-degree gyroscope whose body rotates about an axis perpendicular to the axis of rotation of the outer frame of the suspension, then it can be stated that their kinematics are completely identical, i. e. part 1 in the figure corresponds to the body of a conventional three-degree gyroscope, part 4 corresponds to the frame of the Cardan suspension on the outside, and part 3 is the analog of the inner frame of the Cardan suspension. An additional rotor 5 is fastened on the output axle 3 of the universal joint. It is found that an increase in the kinetic moment of the additional rotor in-

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RASPOROV, V. Ya. et al., Izv. VUZov, Priborostr., Vol 15, No 3, 1972, pp 75-78

creases the time constant of the gyroscope. If the vector of the angular rotational velocity of the additional rotor does not coincide with that of the input axle of the universal joint, motion of the gyroscope is unstable, and is a divergent oscillatory process.



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CIA-RDP86-00513R002202910014-0

SHAYDOROV, Yu. I.

55100 Spt: 05

4-10-73

LUDC 629.78.048:562.998.4.057

CHANGE IN GROWTH PROCESSES AND TISSUE
1 FEB 1968
ENC 629.

Article by Yu. I. Shadrinov, A. I. Miller, V. V. Yankovskiy, A. O. Kravtsov and V. N. Zhuravskiy, L. V. Alkasev
Izvestiya Akademii Nauk SSSR, Moscow, Komlekhtekhnbiologiya
1971, pp 21-27, submitted for publication 25 June 1971.

Abstract: The effect of spaceflight factors on the biological effectiveness of γ -rays was studied with respect to lettuce seeds. It was found that the flight exerted no significant effect on the energy of seed germination, the length of the primary root in flight specimens irradiated before flight was similar to that in the ground controls. According to this test, flight factors increased the effectiveness of postflight irradiation insignificantly. The influence of postflight irradiation inhibited the weight of 30-day plants to the greatest extent. The seed exposure to all the doses tested during the flight resulted in a slight decline of plant weight in comparison with the laboratory control.

We studied the influence of flight factors and ionizing radiation on initial growth processes (sprouting energy and germination of seeds, growth of the primary root), and also on the appearance of aftereffects of the studied phenomenon in growing plants. The experimental plan provided for a clarification of the influence of flight factors on the appearance of a radiobiological effect (seed irradiation prior to flight) and the radiosensitization effect on dry seeds (irradiation after flight). As is well known, the radiation effect on dry seeds begins to appear with the onset of their germination. At that time one observes both the realization of their potential. At that time one observes both the realization of the damage and the oppositely directed processes associated with a normalization of plant growth mechanisms. During the initial growth period the damaging effect of radiation is most clearly manifested. With an increase in plant age recovery processes begin to predominate and in the case of small irradiation doses the radiation effect can be smoothed out.

SHAYDOROV, Yu. I.

Radiation
Biology

SO. JPRS 54768
22 DEC 91

UDC 635.34:58.035.039

EFFECT OF ILLUMINATION ON THE RADIATION EFFECT IN LEAF CABRAGE AFTER
IRRADIATION BY PROTONS AND GAMMA RAYS

Article by L. S. Skutina, Yu. I. Shaydorov and V. N. Nekrasova, Moscow, Komsomolskaya Biologiya i Meditsina, Vol. 5, No. 5, 1971, submitted for publication 1 February 1971, pp 84-87

illumination conditions (light intensity, its spectral composition, duration of light and darkness) in many respects determine the interrelationship of biochemical processes transpiring in the plant organism (Zh. L. Rokhsan; E. A. Yitlyanov, et al.; N. P. Voskresenskaya), and also its reaction to external stimuli. In particular, this factor plays more than a little role in the nature of plant response to radiation. Accordingly, by creating appropriate illumination conditions it is possible to change the direction of physiological and biochemical processes in a plant in such a way as to increase their radiation tolerance and capacity for recovery.

For example, according to data published by V. N. Savin (1962), the cultivation of tomato plants from irradiated seeds with an illumination of 50,000 lux leads to an attenuation of the radiation effect in comparison with an illumination of 10,000 lux. A similar phenomenon was observed during the cultivation of radish plants from irradiated seeds (M. F. Batyagin and V. N. Savin). At the same time, different illumination during the pre-radiation period (3,000-5,000 and 30,000 lux) exerted no influence on radiation effectiveness (M. F. Batyagin and L. A. Misyuk). A shortening of the light period from 12 to 6 and 8 hours during the cultivation of parilla plants under luminescent lamps resulted in an increase in the effectiveness of gamma radiation (V. N. Savin, 1962). We found no data in the literature on the influence of illumination on the effectiveness of protons.

Since ionizing radiation constitutes the greatest danger for plants on space vehicles, it appears desirable to study different plant illumination conditions as a possible radioprotective factor.

SHAYDOROV, Yu. I.

30:JPRS 55100
4 FEB 72

UDC 581.13:577.15/.057:629.78.048

EFFECT OF FLIGHT FACTORS ON THE FORMATION OF ANOMALOUS METABOLITES AND ACTIVITY OF ENZYMES IN PLANTS

Article by R. A. Sharkovskiy, A. T. Miller, Yu. I. Shaydorov and A. O. Krustyn; Moscow, Kogniticheskaya Biologiya i Meditsina, Vol 5, No 6, 1971, submitted for publication 25 June 1971, pp 36-39.

Oxidation processes play an important role in the development of primary radiation damage reactions. Peroxidase is among the typical oxidative enzymes. The activity of these enzymes is a sensitive index of radiation impairment of metabolism in plants (V. A. Kopylov and A. M. Kuzin; A. M. Kuzin, Siberia and Milan). The activation of oxidative enzymatic systems (peroxidase + polyphenol oxidase) in the tissues of irradiated plants leads to an accumulation of primary radiotoxins (A. M. Kuzin and N. P. Korolev). These include substances of phenol nature of the orthoquinone type and the oxidation products of unsaturated fatty acids intensifying the development of primary and initial radiation damage processes (A. M. Kuzin; Yu. B. Kudryashov; P. A. Sharkovskiy). Exposure to different factors (storage, washing, heating, hypoxia, mineral nutrition, protective substances) can substantially change the content of these substances in the body of irradiated animals and plants and thereby decrease the biological effect of irradiation (N. M. Petrasina, et al.; L. I. Bayev; A. M. Kuzin, et al.).

Accordingly, as criteria of the biological effect of ionizing radiation and spaceflight factors we used the content of anomalous metabolites (radiotoxins) and the activity of redox enzymes in plant tissues.

METHOD

The experimental model and the method for cultivating the plants grown from seeds exposed aboard an artificial earth satellite are described in other articles in this number of the journal. The content of anomalous metabolites was determined in plants 7, 10, 20 and 30 days in age. The metabolites were extracted from the plant tissue over a period of 2 hours at room temperature using a quintuple (by weight) quantity of alcohol (purified in Al(OH)₃) acidified to pH 3.3. The extract was filtered and the quantity

Radiation Biology

SHAYDOROVA, V.V.

EFFECTIVENESS IN USE OF STRONGLY BOUND HUMPHRICACITIC ACIDS FOR REGENERATING WATER BY THE SORPTION METHOD

UDC 67.9.16.001.3:629.78.046

Article by V. V. Shaydorova, Moscow, Kuznetsovskaya Biologiya i Meditsina, Kuznetsov, Vol. 7, No. 3, September-October 1972, pp 3-4, submitted for publication 27 August 1971

Abstract: On the basis of experimental findings showing that the need arises for eliminating different cations from fluids: K^+ , Na^+ , Mg^{2+} , and others. One of the methods for eliminating these ions is their sorption and ion exchange on ionites. The choice of resins with high exchange capacities is of considerable importance, since the required weight of the sorbent is dependent on this factor. It is also necessary to take other technological characteristics of resins into account: chemical stability, mechanical strength and non-toxicity.

When regenerating drinking water from products containing moisture the need arises for eliminating different cations from fluids: K^+ , Na^+ , Mg^{2+} , and others. One of the methods for eliminating these ions is their sorption and ion exchange on ionites. The choice of resins with high exchange capacities is of considerable importance, since the required weight of the sorbent is dependent on this factor. It is also necessary to take other technological characteristics of resins into account: chemical stability, mechanical strength and non-toxicity.

Among the different ion exchange resins produced in the USSR it is KU-2 sulfonation resin which comes closest to meeting these requirements: they are obtained as a result of the reaction of polymerization of styrene with divinylbenzene. Divinylbenzene, whose content may vary from 1 to 30%, plays the role of a binding agent creating the three-dimensional skeleton of the molecule. The greater the percentage of divinylbenzene, the "harder" is the skeleton and the lower is the possible swelling of the resin. A decrease in possible swelling in the water results in an increase in the

JPRS 57517
15 MAR 72

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USSR

UDC: 621.372.061

SHAYDUROV, G. Ya.

"Transmission Characteristics of a Differential Synchronous Filter"

V sb. Tonkiye magnitn. plenki, vychisl. tekhn. i radiotekhn. T. 1 (Thin Magnetic Films, Computer Technology and Radio Engineering--collection of works, Vol. 1), Krasnoyarsk, 1970, pp 4-9 (from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2A116)

Translation: The author considers the properties of a differential synchronous filter which operates on the principle of time strobing of the signal. Expressions are derived for the transfer function and amplitude frequency response. It is shown that in the low-frequency region, the given filter has better resistance to low-frequency interference than an asymmetric filter (gain of 20-30 DB). Another advantage is that it has double the transmission ratio on the signal frequency. Two illustrations, bibliography of three titles. N. S.

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USSR

UDC: 550.837

SHAYDUROV, G. Ya.

"A Device for Geoelectric Prospecting by the Method of Transient Processes"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratzys, Tovarnyye Znaki, No 5, 1970, p 72, patent No 261592, filed 30 Aug 67

Abstract: This Author's Certificate introduces a device for geoelectric prospecting by the method of transient processes. The unit consists of a generator of periodic current pulses of one polarity and a measurement circuit which contains an induction field pickup, a synchronous strobing detector, a storage capacitor and a graduated source of compensating voltage. As a distinguishing feature of the patent, the sensitivity and interference stability of the equipment are improved by connecting a discharge relay to the storage capacitor in the measurement circuit. This relay is controlled by a multivibrator and is coupled through a step-up transformer to a pulse amplifier connected to a flip-flop with a null indicator in the arms.

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USSR

UDC 389.6:620.113.543.42

BELOSHITSKIY, L. A., and SHAYEVICH, A. B.

"The Use of Synthetic Standards for the Spectral Analysis of High Carbon Steels"

Sverdlovsk, VII Ural'sk. konf. po spektroskopii (Eighth Ural Conference on Spectroscopy), Vyp. 1, 1971, pp 88-90 (from Referativnyy Zhurnal -- Metrologiya i Izmeritel'naya Tekhnika, No 9, 1972, Abstract No 9.32.33)

Translation: The synthetic standard described consists of two parts: a uniform core of certified material (for example OX18H10T steel) and an external casing, serving as a base for the certified material (for example Armco iron). The two parts of the synthetic standard are joined by press-fitting the core to the casing, or by squeezing the casing around the core with a rolling mill. Using synthetic standards together with control standards for spectral analysis of steel made it possible to obtain results whose reproducibility and convergence were not lower than those of results obtained with the usual method for using standards. Several times less time is expended in preparing a series of synthetic standards than in the common method of preparing metallic standards, in that it is necessary to carry out overall chemical analyses for only two substances (the certified substance and the material of the base).

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USSR

UDC 656.25.071.84.602.56

SHAYEVSKIY, H. A., GIL'BURD, L. M., Chief Designers of the Odessa Branch of the Central Design Office of the Ministry of Railways, ODINTSOVA, A. I., GOL'DSHTEYN, V. P., Design Engineers

"IKI-ST Meter for Fringe Distortions of Telegraph Signals"

Moscow, Avtomatika, Telemekhanika i Svyaz', No 10, 1971, pp 11-14

Abstract: The technical specifications, operating conditions, speed control conditions, and transmitter contact regulation of the IKI-ST meter which measures fringe distortions of telegraph signals with high accuracy are discussed. The meter has been prepared for series production at the Odessa Promsvyaz' Plant. It is designed to measure the distortions of single-current and double current signals code No 2, to regulate the transmitter contacts of the telegraph set, and to monitor and control the telegraph speed. Provision is made to measure distortions at speeds of 50, 75 and 100 baud. The measurement of the start-stop distortions is based on the start-stop method of receiving code combinations and comparison of the proposed characteristic modulation times developed by the meter with the actual reproduction times of the signal reaching the inputs of the meter. The operation of the device is illustrated by diagrams.

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USSR

UDC 681.142.334(049.1)

STEPANOV, A. YE., PASHKO, D. I., SHAYKEVICH, V. D., and POCHTMAN, YU. M.

Kvazianalogovyye Metody Modelirovaniya Krayevykh Zadach Dlya Differentsial'nykh Uravneniy v Chastnykh Proizvodnykh (Quasi-Analog Methods of Boundary Value Problem Simulation for Partial Differential Equations, Kiev, "Naukova Dumka," 1973, 174 pp

Abstract: The monograph contains original results of research in the area of developing and using specialized quasi-analog simulation machines to solve applied problems of mathematical physics described by partial differential equations. In particular, methods of simulating two-dimensional problems in the applied theory of elasticity and non-equilibrium problems of thermal conductivity and underground hydraulics are described, as well as the principles of constructing specialized quasi-analog, mathematical machines for solving these equations.

The book is intended for scientific workers, engineers, graduate students, and students interested in electronic simulation and its theory.

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USSR

STEPANOV, A. YE., et al., Quasi-Analog Methods of Boundary Value Problem
Simulation for Partial Differential Equations, Kiev, "Naukova Dumka," 1973, 174 pp
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Simulation for Partial Differential Equations, Kiev, "Naukova Dumka," 1973, 174 pp

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USSR

UDC 624.04

SHAYKEVICH, V. D.

"Synthesis of Optimal Systems by the Method of Geometric Programming"

Moscow, Stroitel'naya Mekhanika i Rashchet Sooruzheniy, No 4, 1972, pp 15-20

Abstract: The basic algorithms of the method of geometric programming are presented in matrix form, and an efficient technique is proposed for reducing the vector of the variables of a dual geometric-programming problem to the second algorithm. The method of geometric programming is applied to the solution of some problems of structural mechanics, and it thereby becomes possible to evaluate its merits and drawbacks. In favor of the method is the simplicity of the invariant parts of the calculation algorithms, and the possibility of obtaining, in some cases, a general analytic solution in closed form. A drawback of the method is the necessity for solving the system of nonlinear equations numerically if the degree of difficulty is in excess of unity. However, the development of programs for solving such problems on an electronic digital computer permits such computation difficulties to be overcome.

Continuation of research on expansion of the scope of structural-mechanics problems subject to solution by the method of geometric programming,
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SHAYKEVICH, V. D., Stroitel'naya Mekhanika i Rashchet Sooruzheniy, No 4, 1972, pp 15-20

ascertainment of the particularities of the application of this method, and improvement of its algorithms will make it possible for the method of geometric programming to take its place among the method of mathematical programming that are applicable in structural mechanics. It is at present obviously necessary to use all the methods of mathematical optimization for successful solution of the problem of the synthesis of optimal systems in structural mechanics. 3 figures. 4 references.

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USSR

UDC 536.244:533.6.011.5

BAKIROV, F. G. and SHAYKHUTDINOV, Z. G., Aviation Institute imeni Ordzhonikidze, Ufa

"Features of Heat Exchange in the Region of Injection Into a Supersonic High-Temperature Flow"

Minsk, Inzhenerno-Fizicheskiy Zhurnal, Vol 24, No 5, May 1973, pp 790-797

Abstract: In order to provide information on the features of heat exchange in supersonic flows with the transverse injection of a secondary gas, an experimental investigation is made of the distribution of the heat-exchange coefficient during the injection of a gas into the supersonic part of a Laval nozzle. The procedure consisted in experimental determination of the heat-exchange coefficient on the basis of nonsteady heating of a special probe which was thermally insulated along the lateral surface of a long cylinder built into the wind-tunnel wall. The cylinder end was fixed flush with the surface of the wall washed by the stream.

The determining dimensionless parameters of the process were revealed; these can be used in the designing of heat insulation for nozzles which possess systems of secondary gas injection for controlling the thrust vector. 4 figures, 6 references.

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USSR

UDC 693.542:666.97.022.1/5"324"

BRYUKHANOV, G. V., SADOVICH, M. A., SHAYKIN, B. V., Engineers

"Peculiarities of Technology of Application of Concrete at the Ust'-Ilinskaya Hydroelectric Power Plant"

Moscow, Gidrotekhnicheskoye Stroitel'stvo, No 1, Jan. 1973, pp 3-5.

Abstract: Some of the peculiarities of winter concrete operations in the construction of the Ust'-Ilinskaya Hydroelectric Power Plant are described: improvement of the technology of preparation of fillers by hydromechanization with decreased content of the fine fraction must subject to freezing, etc. Winter dry sorting of the sand-gravel mixture in combination with special hydraulic deposition is an effective means for construction in northern regions. The quality of concrete prepared in the winter with large fractions added at down to -10°C is equal to the quality of the concrete prepared in summer. A thermal resistance of the "warm" decking of $1.5 \text{ (m}\cdot\text{hr}\cdot\text{deg)/kcal}$ is sufficient to produce crack-resistant structures in winter.

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USSR

SHAYKIN, M. Ye.

"Invariant Estimates in Statistical Theory of Optimal Systems"

Probl. Upr. i Teorii Inform. [Problems of Control and Information Theory], 1972, Vol 1, No 2, pp 135-152 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V228, by the author).

Translation: Group theory methods are used to solve problems of the theory of adaptive systems operating under conditions of uncertainty. The group theory methods are applicable when the problem is invariant relative to a suitable group of transforms of the variables included in it. The properties of invariant solutions and methods of determining them are studied. A theorem is proven on the characterization of an optimal invariant solution as a generalized Bayes solution corresponding to the right invariant (usually non-normalized) measure of Haar as an a priori distribution in the space of parameters. The method of invariant optimization is illustrated by an example of a problem of identification of a linear object with unknown dispersion of noise.

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USSR

UDC 519.281

SHAYKIN, M. Ye.

"Invariant Estimation of Coefficients of Linear Regression"

Identifikatsiya [Identification -- Collection of Works], Moscow, Nauka Press, 1970, pp 12-19 (Translated from Referativnyy Zhurnal Kibernetika, No 3, 1971, Abstract No 3 V138 by A. Barybain).

Translation: The problem is studied of estimating vector u in the model

$$\eta = Bu + \xi,$$

where $u = (u_1, u_2, \dots, u_N)$. B is a matrix with elements

$$b_{rk} = \int_{s-T}^s g_r(s, t) \varphi_k(t) dt,$$

$$\xi_k = (\xi_{k1}, \dots, \xi_{kN}), \quad \eta = (\eta_1, \dots, \eta_N),$$

$$\xi_k = \int_{s-T}^s g_k(s, t) X(t) dt,$$

$$\eta_k = \int_{s-T}^s g_k(s, t) Z(t) dt,$$

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USSR

UDC 519.281

SHAYKIN, M. Ye., Identifikatsiya, Moscow, Nauka Press, 1970, pp 12-19

$$Z(t) = \sum_{k=1}^N u_k \varphi_k(t) + X(t);$$

$X(t)$ is a Gaussian random process with 0 mean and known correlation function $K(t_1, t_2)$, $g(s, t)$ is the solution of integral equation with kernel $K(t, \tau)$ and function $\phi_k(\tau)$ in the right portion.

The authors set the task of finding the class of such estimates, the risk of which is independent of μ , and finding in this class the best estimate in the sense of minimum risk. It is proven that a rather broad class of such estimates can be produced on the basis of considerations of invariance of the problem relative to certain groups of transforms. Cases are studied when 1) u is a nonrandom vector, 2) u is a Gaussian vector with unknown correlation matrix K_u and unknown mean $Mu = \lambda$, and 3) u is a changing vector. The relationship of invariant estimates with Bayes, least squares and minimax estimates is revealed. In conclusion, the author presents a review of theories in which invariant estimates may be useful.

2/2

USSR

UDC 911.3.616.9:597.6(571.18)

KORSH, P. V., RAVDONIKAS, O. V., MAL'KOV, G. B., VORONIN, Yu. K., ZIMINA, V. Ye., KOSTYUKOV, V. P., IVANOV, V. S., FEDOROVA, T. N., YEGOROVA, L. S., RUDAKOV, V. A., CHULOVSKIY, I. K., and SHAYMAN, M. S.

"On Carrier Characteristics and Contacts With Vectors of Viral and Bacterial Infections Among Omskaya Oblast Wild Animals"

V sb. Vopr. infekts. patol. (Problems of Infection Pathology -- collection of works) Vyp. 2, Omsk, 1970, pp 75-78 (from RZh-Meditsinskaya Geografiya, No 4, Apr 71, Abstract No 4.36.51)

Translation: A table is presented of species composition of oblast wild animals and their relative population by individual landscape subzones in Omskaya oblast (64 species). Transmission of infections with natural foci was established in 27 species for the following diseases: tickborne encephalitis, Omsk hemorrhagic fever, rabies, tickborne scrub fever, Q fever, tularemia, erysipelas, toxoplasmosis, and leptospirosis.

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USSR

UDC 616.981.711-036.21(575.1)

SHAYMAN, M. S., Omsk Scientific Research Institute of Natural-Focus Infections,
RSFSR Ministry of Public Health

"Discovery of a New Natural Focus of North Asian Tickborne Scrub Typhus in
Western Siberia (Preliminary Communication)"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 40, No 3,
May/Jun 71, pp 368-369

Translation: North Asian tickborne scrub typhus appeared in the Soviet Union for the first time in 1938 in the Krasnoyarsk region and was subsequently reported in other regions, among them Western Siberia (Plotsityy, 1946; Kulagin and coworkers, 1947; Mastonitsa, 1949; Shayman, 1957, 1966; Voshchakina, 1958). The western boundary of scrub typhus in Western Siberia is its natural focus in the Berdyuzh region of the Tyumen district (Voshchakina, 1958; Shayman and coworkers, 1965). Natural foci of scrub typhus were identified west of the Tyumen district (in the Kurgan district), where the presence of such foci could be assumed on the basis of territorial, zoologic-parasitic, and other conditions. In 1962 (Shayman, 1964) in a study of 775 cattle sera with the complement fixation reaction, O-fever was found in 9 regions (from 4.2 to 28.3%), and scrub typhus in four regions (from 1.5 to 5.8%). An attempt was made in May 1969 to discover a natural focus of scrub typhus in the Mokrousov region of the Kurgan district, which is located in the forest part of the district.

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USSR

SHAYMAN, M. S. , Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 40, No 3, May/Jun 71, pp 368-369

As far as the territory is concerned, the region is a plain with a lowering toward the southeast, with an abundance of lakes. The forests of the region are essentially birch with an admixture of aspen. The basic fauna consists of small wild mammals, including the following: muskrat (*Ondatra zibethicus*), red-checked suslik (*Citellus mayor* Pall.), water vole (*Arvicola terrestris*), ordinary hamster (*Cricetus cricetus*), field mouse (*Apodemus agrarius*), northern red backed vole (*Clethrionomys rutilus*), and others.

On 20-21 May 1969, we collected from cattle at four population points in the northeast part of the region (the villages Odino, Karpunino, Konosomolsk, and Denisovo) 1305 specimens of Ixodes*. The species composition is as follows. The predominant form was *D. marginatus* Sulz. (89.2%), then *D. pictus* Herm. (10.2%), and *I. persulcatus* P. Sch. (0.6%). The ticks were subjected to a simultaneous laboratory study for scrub typhus and Q-fever in tests with guinea pigs, and tissue cultures (trypsinized culture of chick embryo fiberblasts) and by the fluorescent antibody method (intestines and hemolymph of each tick).

Data are presented in this paper on infection of guinea pigs with
*Determination of the species composition of the ticks was done by Candidate of Biological Sciences V. G. Fedorov.

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USSR

SHAYMAN, M. S., Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 40, No 3, May/Jun 71, pp 368-369

suspensions of the ticks (bioassay). Hungry ticks were grouped into sets of 50 (25 males and 25 females). The animals were infected in the conventional way by intra-abdominal injection of male guinea pigs weighing 300 to 400 g with tick suspensions prepared by grinding and suspension in physiological saline. A total of 300 ticks were studied in six tests, of these 200 were *D. marginatus* (in four tests) and 100 were *D. pictus* (in two tests). It was not possible to isolate the Q-fever agent from either type of tick. Three strains of the agent of scrub typhus (*D. sibiricus*) were isolated from *D. marginatus* ticks, which had been collected in the villages Denusovo, Komsomolskoe, and Karpunino.

The cytomorphological characteristics of the isolated agent were studied. A completely soluble antigen of *D. sibiricus* was prepared from one isolated strain, in eight passages on guinea pigs, and this strain was adapted to chick embryo yolk sacs (four passages). Guinea pig sera used in the passages were studied by complement fixation with an antigen from *D. sibiricus*, prepared by the Institute of Epidemiology and Microbiology imeni N. F. Gamaleya of the Academy of Medical Sciences SSSR and prepared by the authors. In this test complement-fixing antibodies were found in the reactions with both anti-

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USSR

SHAYMAN, M. N., Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 40, No 3, May/Jun, pp 368-369

gens in rather high titers (mostly 1:160 to 1:320). That the isolated strains belonged to the agent of scrub typhus was shown in cross-immunity tests. The cultures were preserved by lyophilization.

Summary

1. In the Mokrousos region of the Kurgan district, the agent of North Asian scrub typhus was first isolated from three groups of *D. marginatus* Sulz. ticks; in this way, the existence of a new natural focus of scrub typhus in Western Siberia was shown.
2. A further research problem is the study of the immune structure of the agent of scrub typhus in man, farm animals, and small wild mammals.

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USSR

UDC 616.981.71-022.395.42-036.21(571.51)

SHAYMAN, M. S., VOSHCHAKINA, N. V., NOZIK, S. I., PATS, S. I., and KRASOV-SKIY, F. V., Omsk Institute of Infections with Natural Foci and Krasnoyarsk Kray Sanitary Epidemiological Station

"Data Pertaining to the Epidemiology of North Asian Tickborne Rickettsiosis in Krasnoyarsk Kray in 1936-1967"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 4, Apr 71, p 7 11

Abstract: North Asian tickborne rickettsiosis which was initially identified in Krasnoyarsk Kray in 1936, still occurred there in 1967, with a distribution exceeding that in any other part of the USSR. From 1936 to 1967, 10,634 cases of this disease were recorded in Krasnoyarsk Kray. The highest incidence of the disease was in the 30 south-eastern rayons. Children younger than 16 yrs were mainly affected (61.3% of cases). The principal vector of the disease was *D. nuttalli*. The agent (*D. sibiricus rickettsiae*) was isolated for the first time from *I. persulcatus* and *H. concinna*. The most effective methods of detecting *D. sibiricus rickettsiae* in ticks were by immunofluorescence tests and tissue culture methods. Comparison of results obtained by various test methods showed that epidemiological data pertaining to exposure of the popula-
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USSR

SHAYMAN, M. S., et al., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii,
No 4, Apr 71, pp 7-11

tion to the infection could be best obtained by means of skin allergy tests.
It was established that a considerable degree of latent immunity existed
in the population. Absence of latent immunity was one of the reasons for the
predominant occurrence of the disease among children.

2/2

EQUIPMENT
Aeronautical

USSR

UDC 629.7.036.3:531.7

GUSEV, Yu. M., IVANOV, A. I., ~~SHAYMARDANOV, E. A.~~

"Synchronized Device for Converting the Rotating Speed of a Gas Turbine to Pulse-width Modulated Signals"

Tr. Ufim. Aviats. In-ta. [Works of Ufim Aviation Institute], 1971, No 18, pp 3-14.
(Translated from Referativnyy Zhurnal Aviatsionnye i Raketnyye Dvigateli, No 1, 1972, Abstract No 1.34.75 from the resume).

Translation: Recently, electrical gas turbine speed measuring and regulating devices have become common. In these devices, the signal from the turbine speed sensor is sent to the control system as a periodic voltage curve of some shape with a frequency proportional to the rotating speed of the engine. The necessity frequently arises of converting the frequency of the rotating speed sensor signal to a proportional dc voltage. The best device for this purpose is a frequency to voltage converter with double conversion from frequency to duty cycle to voltage, one stage of which consists of formation of pulse-width modulated signals with a duty factor proportional to the frequency

$$S = \tau / T,$$

USSR

GUSEV, Yu. M., et al., Tr. Ufim. Aviat. In-ta, 1971, No 18, pp 3-14

where τ is the time interval of the pulse-width modulated signal; T is the period of the frequency being converted. This work presents a comparative analysis of several possible means of formation of the duty factor of the signal. 4 figs; 7 biblio refs.

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USSR

UDC 58.08:632.4:633.11

SHAYMARDANOV, I. M., Department of Phytopathology, Kazakh Institute of Plant Protection, Alma-Ata

"A Method for Assessing Wheat Infection With Powdery Mildew"

Leningrad, Mikologiya i Fitopatologiya, Vol 7, No 5, 1974, pp 462-463

Abstract: A new scale has been developed for evaluating the extent of wheat affliction with *Erysiphe graminis* Dc. f. *tritici* (powdery mildew agent). The method depends on examining 100 plants and determination of the extent to which the stem, leaves, and internodal spaces on each plant are affected. A value of 0 indicates a plant entirely free of disease, while a value of 4 indicates that the fungal pustule covers 75% to 100% of the leaf surface and internodal space.

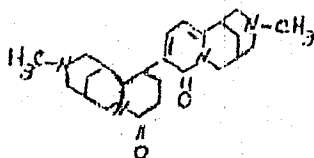
USSR

UDC 547.944/945
ISKANDROV, S., VINOGRADOVA, V. I., SHAYMARDANOV, R. A., Order of the Red
Banner of Labor Institute of Chemistry of Plant Substances, Academy of
Sciences of the Uzbek SSR

"Dimethamine -- a New Bimolecular Alkaloid Isolated from *Thermopsis
Alterniflora*"

Tashkent, *Khimiya Prirodnykh Soyedineniy*, No 2, 1972, pp 218-222

Abstract: A new alkaloid, dimethamine, was isolated from the *Thermopsis
alterniflora* by column chromatography on silica gel. The melting point of
the new alkaloid is 216-217° C, accompanied by decomposition. The alkaloid is
optically active and yields crystalline dihydrochloride, dipicrate and
diiodomethylate. The composition and the nature of salts indicates that
this substance has bimolecular structure. On the basis of IR, NMR and mass
spectrometric data the following structure is proposed for the new compound.



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Alkaloids

USSR

UDC 547.944/945

SHAYKHARDANOV, R. A., ISKANDAROV, S., and YUNUSOV, S. YU., Red Banner of Labor
Institute of Plant Chemistry, Uzbek Academy of Sciences

"New N-Substituted Derivatives of Cytisine"

Tashkent, Khimiya Prirodnikh Soyedineniy, No 3, 1971, pp 383-384

Abstract: Thanks to its wide distribution and strong physiological activity, cytisine is a favorable basis for producing various N-substituted derivatives which may be of value in determining the connection between structure and physiological activity.

Continuing the work of earlier researchers begun on this basis, the authors obtained derivatives of cytisine and N-(β -oxy, γ -aminopropyl) cytisine, with dialkyl esters of phosphorous acid (2 moles of cytisine were dissolved in a chloroform-CCl₄ mixture, to which was added 1 mole of the dialkyl ester of phosphorous acid). From the resulting precipitate (cytisine chlorohydrate) by various additions (methanol, ammonia, and dialkyl esters of phos. acid) were then produced seven N-substituted derivatives -- C₁₅H₂₃N₂PO₄, C₁₇H₂₇N₂PO₄, C₁₉H₃₁N₂PO₄ (two compounds, the dibutylphosphate and the diisobutylphosphate), C₁₄H₂₁N₃O₂, C₂₀H₃₄N₃PO₅, and C₂₂H₃₈N₃PO₅.

USSR

SHAYMARDANOV, R. A., et al., Khimiya Prirodnykh Soyedineniy, No 3, 1971,
pp 383-384

For these seven compounds, yield factors as well as molecular weights,
and several other physical constants, and molecular structures, were determined.

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USSR

UDC 547.944/945

SHAYMARDANOV, R. A., ISKANDAROV, S., and YUNUSOV, S. Yu., Order of the
Red Banner Institute of Natural Products Chemistry, Acad. Sci. USSR

"Study of the Alkaloids Thermopsis Alterniflora"

Tashkent, Khimiya Prirodnikh Soyedineniy, No 2, 1971, pp 169-174

Abstract: The above-ground portion of Thermopsis alterniflora collected on the 16 April 1968, when it just began to bloom, was studied. Chloroform extraction gave a 3.35% total content of alkaloids consisting of citizine, N-methylcitizine, pachycarpine, termopsin, and a new alkaloid alteramine. On the basis of physical properties and IR spectra alteramine is believed to be 11-allyl-N-methylcitizine.

1/1

- 5 -

1/2 020
TITLE--ALTERAMINE A NEW ALKALOID FROM THERMOPSIS ALTERNIFLORA -U-
AUTHOR--(03)--SHAYMARDANOV, R.A., ISKANDAROV, S., YUNUSOV, S.YU.
COUNTRY OF INFO--USSR
SOURCE--KHIM. PRIR. SOEDIN. 1970, 6(2), 276-7
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
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CHLOROFORM, UV SPECTRUM, IR SPECTRUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0454
CIRC ACCESSION NO--AP0132669
STEP NO--UR/0393/70/006/002/0276/0277
UNCLASSIFIED

2/2 020
 CIRC ACCESSION NO--AP0132669
 ABSTRACT/EXTRACT--(U) GP-0-
 T. ALTERNIFLORA WITH CHCL SUB3 GAVE 3.35PERCENT OF ALKALOIDS; ET SUB2 D
 DISSOLVED PACHYCARPINE, ISOLATED AS THE HCLP SUB4 SALT, M. 171DEGREES.
 CHROMATOG. OF THE CHCL SUB3 SOLN. GAVE N-ACETYLCYTISINE AND CYTISINE;
 FROM THE MOTHER LIQUORS, A NEW ALKALOID ALTERAMINE (I), C SUB15 H SUB20
 ON SUB2, M. 112DEGRES, (ALPHA) MINUS 43DEGREES (HCLD SUB4 SALT M.
 234-5DEGREES; HI SALT M. 212-13DEGREES, PICRATE M. 215-15DEGREES, HCL
 SALT M. 185-60DEGREES, MEI SALT M. 225-6DEGREES) WAS OBTAINED.
 HYDROGENATION WITH RANEY NI GAVE A DIHYDRO DERIV. WITH (ALPHA) SUBD
 MINUS 100DEGREES; HCLD SUB4 SALT M. 272DEGREES. UV AND IR SPECTRA, AS
 WELL AS CRO SUB3 OXIDN. SUPPORT A TRICYCLIC ALKALOID OF THE CYTISINE
 STRUCTURE WITH A PROPYL SIDE CHAIN FOR I.
 RAST. VESHCHESTV, TASHKENT, USSR.

UNCLASSIFIED

PROCESSING DATE--04DEC70

FACILITY: INST. KHIM.

UNCLASSIFIED

USSR

SHAYN. B. M.

UDC 512.7

"Codeterminability Relation on Semigroups of Functions"

V sb. Uporyadochennyye mnozhestva i reshetki (Ordered Sets and Lattices -- Collection of Works), Vyp. 1, Saratov, Saratov University, 1971, pp 86-89 (from RZh-Matematika, No 2, Feb 72, Abstract No 2A214 by YE. GABOVICH)

Translation: The partial transformations \mathcal{P} and \mathcal{Q} of the set A are said to be codeterminate if $\text{pr}_1 \mathcal{P} \cap \text{pr}_1 \mathcal{Q} \neq \emptyset$ for some $\alpha \in A$. The relation of codeterminability on the semigroup Φ of (not necessarily all) partial transformations of the set A is designated as \mathcal{Y}_Φ .

Theorem. Let \mathcal{Y} be a binary relation on semigroup G . For the existence of the isomorphism $\alpha: G \rightarrow \Phi$ onto some Φ , converting \mathcal{Y} into \mathcal{Y}_Φ (i.e., such that $(g_1, g_2) \in \mathcal{Y} \Leftrightarrow (g_1 \alpha, g_2 \alpha) \in \mathcal{Y}_\Phi$; let us call \mathcal{Y} the relation of codeterminability on G), it is necessary and sufficient that \mathcal{Y} be a left reducible $[(g_1, g_2) \in \mathcal{Y} \Rightarrow (g_1, g_2) \in \mathcal{Y}]$ and right negative $[(g_1, g_2) \in \mathcal{Y} \Rightarrow (g_1, g) \notin \mathcal{Y}]$ relation of 0-quasiequivalence [i.e., \mathcal{Y} is either symmetric or

1/2

USSR

SHAYN, B. M., Uporyadochennyye mnozhestva i reshetki, Vyp. 1, Saratov, Saratov University, 1971, pp 86-89

reflexive, or, if $0 \notin \text{pr}_1 \gamma$, then $(g, g) \in \gamma$ for all $g \neq 0$.

Corollary 1. The minimum relation of codeterminability γ_0 on the semi-group G is defined thus: $(g_1, g_2) \in \gamma_0 \iff \exists g, h_1 h_2 \in G (0 \neq g g_1 h_1 = g g_2 h_2 \neq 0)$.

Corollary 2. In order for $G \times G$ to be a unique relation of codeterminability on G , it is necessary and sufficient that G have no zero and $\forall g_1, g_2 \in G \exists g, h_1, h_2 \in G (g g_1 h_1 = g g_2 h_2)$.

2/2

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Acc. Nr.: A70046520

Ref. Code: URC146

USSR

UDC 621.316.761.2

MELIK-SHAKHNAZAROV, A.M., PITERYAKOV, V.V., SHAYN, I.I.

"Use of the Scanning Conversion Principle in Constructing
Alternating Current Compensators"

K voprosu o primeneniі printsipa razvertyvayushchego pre-
obrazovaniya pri postroyeniі kompensatorov peremennogo toka
(cf. English above), Leningrad, Izvestiya Vysshikh Uchebnykh
Zavedeniy, Priborostroyeniye, 1970, No 1, pp 15-19

Translation:

The article examines the use of scanning conversion
methods in alternating current automatic control systems.
The possibility is demonstrated of increasing the speed
of response for a low carrier frequency of the signal being
measured.

Reel/Frame
19781777

di 4

SHAYRIN, S.V.

metallurgy

MATHEMATICAL MODELING AND OPTIMIZATION OF BLAST-FURNACE PROCESS PARAMETERS

Article by Professor S. V. Shayrin; Moscow, Vestnik Akademii Nauk SSSR, Russian, No 11, November 1971, pp 76-79

UDC: 669.02

The prediction of indices and optimization of parameters of metallurgical processes are a most important practical problem, but known balance methods fail to give an exhaustive solution. Calculations on initial and terminal states in the blast-furnace process exclude from the analysis such raw material and fuel properties as reducibility of the ore, reaction capability of the coke, piece size; thus it is difficult to predict smelting indices on new materials.

Study of the laws of counter-current heat exchange and the specific features of gas reduction of iron oxides in the presence of solid carbon makes it possible to reveal a number of important features of the blast-furnace process, but even in this case analysis is incomplete -- "spontaneous" specific heat (C_{spont}) excludes the kinetics of chemical reactions, and consequently the properties of the raw materials and fuel are analyzed solely from the standpoint of heat transfer phenomena. Therefore the process can be examined only on the basis of melt results, utilizing generalized characteristics of ore reduction in the furnace.

An ideal method of predicting blast-furnace melt indices should be based only on external parameters: properties of the raw material and fuel, blast and temperature conditions, quality of the pig iron and slag, charging system and furnace profile.

One must increasingly utilize the laws of heat exchange and mass transfer, as well as elaborating complex mathematical process models.

Computer capabilities have in some measure determined research progress in this area both in this country and abroad. The practical significance of mathematical descriptions of the laws of heat exchange, ore reduction by gas and gas by coke applicable to conditions in the layer has increased. Particular attention is now focused on studying the mechanics of free-flowing media, and the hydrodynamics of melts under conditions of gas counterflow.

Doc. Nr: AP0037040

Ref. Code: UR 0239

PRIMARY SOURCE: Fiziologicheskii Zhurnal SSSR, 1970, Vol 56,
Nr 2, pp/37-43

ROLE OF THE RETINA'S ANTENNA PROPERTIES IN ANALYSIS OF VISUAL
SPACE

Shaytor, E. P.

Dept. of Biophysics, Leningrad State University, Leningrad

A mechanism for evaluation of distances and object size necessary for sense projection on its object within the visual system, was suggested. Information on mutual placing of the objects in the visual field was shown to be obtainable under conditions of neuronal handling of activity distribution of directionally sensitive cones, regardless of focused or unfocused object images on the retina and the eye's accommodation state. The neuronal handling of the retinal activity was presented in formulas that are well in accordance with experimental data obtained during studying the constancy of size.

D. 7.

REEL/FAME
19721976

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BYKOV, Ya. V.; SHAZHALIYEV, T.

"Solvability of the Cauchy Problem for Certain Types of Ordinary Differential Equations"

Alma-Ata, Izvestiya Akademii Nauk Kazakhskoy SSR: Seriya Fiziko-Matematicheskaya; January-February, 1971; pp 7-11

ABSTRACT: The authors study sufficient conditions for the existence of solutions of the Cauchy problem $u(b) = 0$ for the system of differential equations $L[u] = \frac{du(t)}{dt} - A(t)u(t) - B(t)u(a) = f(t) + \mu \tilde{f}(t, u, \mu)$, expressable in the

form $u(t, \mu) = \sum_{k=0}^{\infty} u_k(t) \mu^{k/m}$. m is a positive integer; $u(t)$, $f(t)$ are l -dimensional vectors; a, b are fixed points of the segment $[c, d]$; $A(t)$, $B(t)$ are $l \times l$ -matrices; $\tilde{f}(t, u, \mu)$ is a nonlinear operator transforming the continuous l -vector $u(t)$ into a continuous l -vector, analytic with respect to the vector $u(t)$ and the parameter μ .

Seven theorems are presented, and the article includes 8 equations. There are two references.

1/1

USSR

UDC 619-616.988.43:576.809.7

FOMINA, M. S., DRYAGALIN, N. N., ~~SHAZHKO, Zh. A.~~, and ONUFRIYEV, V. P.,
All Union Scientific Research Institute of Foot-and-Mouth Disease

"Antigenic Properties of Type C Foot-and-Mouth Disease Virus"

Moscow, Veterinariya, No 9, Sep 70, pp 40-42

Abstract: It was long held that type C foot-and-mouth disease virus, unlike types O and A, does not show variations in its antigenic properties. However, two strains of type C isolated in Great Britain exhibited considerable differences. Six strains of type C -- C-Polish, C-Czechoslovakian, C-TL-112 (received from Czechoslovakia), C-PL-42 (received from Poland), C-standard, and C-65 -- were studied in order to establish antigenic variations. On the basis of cross titration, complement-fixation and neutralization tests, the antigenic similarity of the strains (expressed in R%) was determined. The R values were calculated by a method described in the literature. Using the six strains, R was found to be 33-100% and 65-96% for the complement fixation and neutralization reactions, respectively. C-Polish, C-PL-42, and C-Czechoslovakian were identical (R = 91-100%). They differed considerably from C-65 (R = 55-70%) and C-standard (R = 33-48%). C-65 and C-standard differed from each other (R = 50%).

1/1

USSR

UDC 539.182/.184

GLEMBOTSKIY, I. I., KAROSENE, A. V., KISELEV, A. A., SAVUKINAS, A. Yu.,
SHCHADZHIYUENE, S. D., YUTSIS, A. P.

"Theoretical Study of the Absorption of Soft X-Rays by Metal Films of
Lanthanum and Cerium"

Lit. fiz. sb. (Lithuanian Physics Collection), 1972, Vol. 12, No. 2,
pp 235-244 (from RZh-Fizika, No 10, Oct 72, Abstract No 10D30)

Translation: The problem of the interpretation of an experimentally estab-
lished structure of the absorption spectra of rare earth metals La and Ce
on both sides of the absorption boundaries $N_{IV,V}$ was studied theoretically.
The given structure is explained by the transitions $4d^{10}4f^n \rightarrow 4d^9 4f^{n+1}$ in
triply charged ions of these elements. Interpretation of maxima of the
absorption curves by discrete transitions is verified by computation of the
strengths of the lines. The calculations were conducted with the aid of
numerical solutions of ordinary Hartree-Fock equations. The results show
that experimental maxima are well identified by the atomic transitions
 $4d^{10}4f^n \rightarrow 4d^9 4f^{n+1}$ both as to the position of the maxima and as to their
relative strengths of the lines. Authors abstract.

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- (1) -

USSR

UDC 51

ALIYEVSKAYA, L. V., POPOVA, G. S., SHCHAPIRO, A. D.

"Mathematical-Economic Models of the Development of the Subbranches of Petroleum and Chemical Machine Building"

Sb. tr. In-t gidrodinam. Sib. otd. AN SSSR (Collected Works of the Hydrodynamics Institute of the Siberian Department of the USSR Academy of Sciences), 1971, vyp. 4, pp 149-164 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V540)

Translation: On the basis of the existing control system, many branches of the national economy are combining so many different subbranches that it is impossible to construct a united sufficiently conceivable mathematical-economic model adequately describing all the subbranches. In this paper an effort has been made to construct models of the distribution of capital investments for the future in the petroleum and chemical machine building branch with satisfaction of the given requirements for the branch production by years. Inasmuch as in the given case the capital investments are not restrictions but must be defined, the possibility arises for consideration of each subbranch individually. For each of the investigated subbranches the problem of optimizing the capital investments is formulated in the following way: it is necessary to find the optimal capital investments (by the criterion of minimum reduced expenditures) under the condition of complete satisfaction of the demand for the production of each type for the given subbranch for all years of the planned period. The models for the formalization of the problems are selected beginning

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USSR

ALIYEVSKAYA, L. V., et al., Sb. tr. In-t gidrodinam. Sib. otd. AN SSSR, 1971, vyp. 4, pp 149-164

with the internal structure of the subbranches and, primarily, the nature of the basic equipment. If the basic equipment of the enterprises is sufficiently specialized with respect to the subbranch, then the integral (variant) model is most adequate. For the polymer machine building subbranch, a partially integral model is constructed; in this way the nonlinear nature of the dependence of the specific capital investments on the production volumes is approximately taken into account. For the petroleum equipment production subbranch the model of linear programming is constructed which takes into account the conditions of mutual interchangeability of the types of equipment. The model is given in the continuous statement also for the subbranch of paper and cellulose machine building -- various conditions of the introduction and mastery of facilities during different periods are considered here.

2/2

Materials

USSR

UDC 621.039

KOT, A. A., Doctor of Technical Sciences, GRUZDEV, N. I., SHCHAPOV, G. A.,
TIPKIN, S. A., and BOGUSLAVSKIY, V. B., Engineers

"Study of the Radiolytic Processes in the Loop Water of a Reactor"

Teploenergetika, No 1, January 1972, pp 31-34

Abstract: Investigations were conducted at the second unit of the BAES (Beloyarsk Atomic Electric Power Plant) with respect to a study of the radiolysis of water, the extent of the radiolytic decomposition of ammonia which is dosed into the feed water of the reactor, and the formation of nitrates and nitrites in the area of the reactor. Methods were studied for suppression of the radiolysis of the water and removal of the radiolytic oxygen. The experiments were conducted during a change of the reactor power from 130 to 360 megawatts (thermal) which corresponds to the electrical power of the unit of 40-130 megawatts. The vapor content in the evaporative channels of the reactor remained constant independently of the reactor power and was equal to 15.4--16.6 percent. 4 fig. 1 tab. 2 ref.

1/1

007

TITLE--CHROMOSOME MORPHOLOGY OF THE TETRAPLOID WHEAT SPECIES -U- UNCLASSIFIED PROCESSING DATE--27NOV70

AUTHOR--SHCHAPOVA, A.I.

COUNTRY OF INFO--USSR

SOURCE--TSITOLOGIYA 12(1): 91-101. ILLUS. 1970

DATE PUBLISHED-----70

SUBJECT AREAS--AGRICULTURE, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--WHEAT, PLANT GENETICS, CHROMOSOME, MORPHOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/0508

CIRC ACCESSION NO--AP0134276

STEP NO--UR/9053/70/G12/001/0091/0101

UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0134276

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MORPHOLOGY OF CHROMOSOMES WAS ANALYZED FOR A NUMBER OF FORMS OF TRITICUM TIMOPHEEVI ZHUK., T. DURUM DESG., T. DICOCCUM SCHUBLE. A TYPICAL KARYOTYPE MADE UP OF CHROMOSOMES NOT DIFFERING SIGNIFICANTLY IN THE LENGTH AND RATIO OF ARMS IN MOST OF THE FORMS WAS TAKEN AS A STANDARD FOR DETERMINING THE DIFFERENCES BETWEEN THE KARYOTYPE OF FORMS AND THE INITIAL KARYOTYPE OF THE SPECIES. ANALYSIS OF KARYOTYPES IN 10 FORMS OF 3 SPP. REVEALED 2 FORMS WHOSE KARYOTYPES DID NOT DIFFER FROM THE TYPICAL KARYOTYPE OF THE SPECIES, FORMS OF T. TIMOPHEEVI AND T. DURUM. THE KARYOTYPES OF OTHER FORMS WERE FOUND TO DIFFER FROM THE TYPICAL KARYOTYPES IN CHROMOSOMES 1-5 AND FROM ONE ANOTHER IN CHROMOSOMES 3-8. NO DIFFERENCES WERE DETECTED AS CONCERNS THE DEGREE OF VARIABILITY OF DIFFERENT FORMS. THE SPECIES IN QUESTION DIFFER IN THEIR TYPICAL KARYOTYPES. THE TYPICAL KARYOTYPES OF T. DICOCCUM AND T. DURUM DIFFER IN 2 CHROMOSOMES, WHEREAS T. TIMOPHEEVI DIFFERS FROM THESE IN 7 CHROMOSOMES. FACILITY: LAB. CYTOGENET., INST. CYTOL. GENET., SIB. BR. ACAD. SCI. USSR, NOVOSIBIRSK, USSR.

UNCLASSIFIED

Acc. Nr.

AP0036334

Abs
CHE

Service:

4-70

Ref. Code

UR 0068 4

698092 Welding conditions and corrosion resistance of welded seams. Klochkov, A. I.; Emel'yanova, V. P.; Dobrovolskii, I. P.; Koval, A. B.; Gribov, L. F.; Grigor'ev, N. P.; Klishchevskii, G. G.; Shchegoleva, A. V. (Chelyabinsk. Politekh. Inst., Chelyabinsk. USSR). *Koks Khim.* 1970, (1), 50-2 (Russ.). The corrosion resistance of welds depends on the type of the welding process applied, on the electrode type, on the compn. of additives, on addnl. thermal treatment, and on the cooling of the seam. For min. corrosion in connections and app. for sulfate plants the following procedure is recommended: in are welding the A-type electrode (C 0.11, Mn 0.0-1.5, Si 0.0-1.1, Cr 16.5-19.5, Ni 7.8-10.0, Mo 1.7-1.5, S 0.02 and P 0.03%) should be preferentially used with Mo as additive. The max. current intensity is 110 A for the welding in Ar atm. with addnl. rod of 1Kh18N9T steel (C \leq 0.12, Mn 1-2, Si \leq 0.80, Cr 17-19, Ni 8-9.5, Ti (C -0.02) \times 5-0.7, S \leq 0.02, P \leq 0.035%). Z. Sterbacek

REEL/FRAME
19721172

UDC 669-172:621.3.032.26

USSR

KUKAVADZE, G. M., SUVOROV, A. L., and SHCHAROV, B. V.

"Study of Neutron-Bombarded Tungsten Single Crystals Using an Ion Projector"

Monokristaliy Tugoplavkikh i Redkikh Metallov [Single Crystals of Refractory and Rare Metals -- Collection of Works], Nauka Press, 1971, pp 99-102

Translation: A low-temperature helium ion projector is used to study defects arising upon bombardment of tungsten specimens with fission-spectrum neutrons (integral flux $1.5 \cdot 10^{19}$ n/mm²). The formation of individual vacancies is detected (concentration $\sim 10^{-4}$), as well as individual atoms displaced into interstitial positions, vacancy clusters ~ 10 Å in diameter and larger, and dispersion clusters encompassing multiatomic areas, in which a significant number of atoms of the lattice are located. 3 Figures; 5 Biblio. Refs.

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UNCLASSIFIED

PROCESSING DATE--11 DEC 70

1/2 027

TITLE--RABIES PROPHYLAXIS IN ANIMALS -U-

AUTHOR--SHLJASTLIVYY, I.N.

COUNTRY OF INFO--USSR

SOURCE--VETERINARIYA, 1970, NR 3, PP 54-55

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RABIES, PROPHYLAXIS, DISEASE CONTROL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO---FD70/605049/E03 STEP NO--UR/0346/70/000/003/0054/0055

CIRC ACCESSION NO--AP0143386

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--11DEC70

2/2 027

CIRC ACCESSION NO--AP0143386

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. ELIMINATION OF RABIES AMONG ANIMALS IN THE CITY AND PREVENTION OF OUTBREAKS FOR A NUMBER OF YEARS HAS BEEN ACHIEVED BY BROAD VACCINATION OF DOGS, STRICT OBSERVANCE OF RULES FOR KEEPING DOGS, MASS EXTERMINATION OF HOMELESS CATS AND STRAY DOGS, AND A BROAD EDUCATIONAL PROGRAM FOR THE PUBLIC, WITH THEIR ACTIVE PARTICIPATION. THE LAST OUTBREAK OF RABIES OCCURRED IN 1960-1961, AND THE LAST RECORDED CASES IN 1963. IN 1960-1961, 7000 CATS AND 6000 DOGS WERE TRAPPED ANNUALLY. MOBILE RABIES VACCINATION VANS VISIT THE MOST REMOTE REGIONS. FEES ARE PAID TO PEOPLE BRINGING IN STRAY DOGS AND CATS.

FACILITY: MINSKAYA GORODSKAYA VETERINARNO-SANITARNAYA STANTSIIYA, MINSK MUNICIPAL VETERINARY AND SANITATION STATION.

UNCLASSIFIED

AA0040727- SHCHASTNY Y.P.M. MUR 0482 1-78

Soviet Inventions Illustrated, Section I Chemical, Derwent,

242338 HEAT-INSULATION of the top part of a steel ingot is provided by a rapidly hardening composition which is poured between the casting mould and a model. In an example, the composition consists of 95-96% of quartz sand and 4-5% of ferrochrome slag, with addition of 7-10% of a binder comprising water glass and a foaming agent). The insulation does not require any additional drying; it is porous and permeable to gases. This method is simpler and more rapid than the conventional methods.

12.5.68 as 1239974/22-2. V.G. DODOKA et alia.
"ZAPOROZHSTAL" WORKS. (2.9.69) Bul 15/25.4.69.
Class 31b. Int.Cl.B 22d.

19750379

AAG040727

AUTHORS: Dodoka, V. G.; Zhil'ko, M. M.; Podgorodetskiy, A. A.;
Gurskiy, G. L.; Tkachenko, A. S.; Shchastnyy, P. M.;
Shevlyakov, N. F.; Petrov, L. G.; Rudichev, K. P.; and
Sidorenko, O. A.

Zavod "Zaporozhstal"

19750380

USSR

UDC: 69.001.5:621.311.21.(282.251.2)

BLINKOV, V. V., SKLADNEV, M. F. and SHCHAVELEV, N. F., Candidates of Technical Sciences, ROZANOV, N. S., Doctor of Technical Sciences, and KHEBNIKOV, N. V., Engineer

"Scientific Research Work for the Krasnoyarsk Hydroelectric Power Plant"

Moscow, Gidrotekhnicheskoye Stroitel'stvo, No 9, Sep 72, pp 6-10

Abstract: A great deal of scientific research work was done as the basis for the plan and the construction of the Krasnoyarsk hydroelectric power station. The organization of this research and introduction of its results, designed to assure the reliability of structures and increase the technical and economic indicators of the power plant, were possible due to the close, creative cooperation between planners, constructors, scientists and operating personnel. Many of the results of the studies performed are of significance not only for the Krasnoyarsk power plant, but also for many large hydroelectric power plants under construction, in planning or design. The Krasnoyarsk hydroelectric power plant, the world's largest, is and remains one of the primary experimental bases for Soviet water engineering science. Studies included both model-scale studies and tensometric and other studies of the actual power plant during various stages of construction.

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USSR

UDC 666.1.053.525

MIT'KIN, V. M. and SHCHAVELEV, O. S., Candidate of Sciences

"Thermooptical Characteristics of Optical Types of Glass"

Leningrad, Optiko-Mekhanicheskaya Promyshlennost', No 9, Sep 73, pp 26-29

Abstract: Calculated values are presented of the thermooptical constants of industrial and experimental types of optical glass. It is shown experimentally that there is a relation between induced optical distortions and the value of a combination of thermooptical constants, and not with the value of the known constant W . Ways are indicated for the development of types of glass that are suitable for use in optical devices employed under conditions of unstable temperature fields. 4 figures. 10 references.

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USSR

UDC 666.112.92:546.18

SHCHAVELEV, O. S., BARKINA, V. A., and DIDENKO, L. A.

"Optical Glass"

USSR Author's Certificate No 366159, Filed 29 Sep 71, Published 16 Jan 73
(from Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 7,
Mar (a) 73, Claim No 1701960/29-33)

Translation: An optical glass including P_2O_5 , BaO, PbO; La_2O_3 , Al_2O_3 , B_2O_3 ,
 K_2O ; Nb_2O_5 ; and CeO_2 is distinguished by the fact that in order to guarantee a
small thermo-optical constant with a characteristic refraction of 1.1611 and a
mean dispersion of 0.01095, it contains the above components in the following
quantities, weight %: P_2O_5 42-45, BaO 36.5-39.5, PbO 8.5-10.5, La_2O_3 2-3,
 Al_2O_3 1-2, B_2O_3 1-2, K_2O 2-3, Nb_2O_5 0.1-1, CeO_2 0.1-1.

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USSR

UDC 621.378.3; 535.89

MAK, A. A., Doctor of Sciences, MIT'KIN, V. M., SOMS, L. N., STEPANOV, A. I.,
Candidate of Sciences, SHCHAVELEV, O. S., Candidate of Sciences

"On Thermo-Optical Constants of Activated Glass"

Leningrad, Optiko-mekhanicheskaya promyshlennost', No. 9, Sep 71, pp 42-45

Abstract: A simple method is described for determining the thermo-optical constants of glass and the possibilities of obtaining glasses with small thermo-optical constants is discussed. It is noted that optical pumping of the active element of a laser is accompanied by heating of the laser and the formation of temperature gradients in the transverse cross section which cause stresses and double refraction, so that optical distortions arise in the element. Although many methods have been described for overcoming the harmful effects of distortions caused by these effects on the generation process, it is suggested that a more radical method would be the development of materials in which thermal distortions would be sufficient small. Three constants are discussed: N , the thermo-optical constant ordinarily applied in optics; P and Q , constants characterizing the distortion averaged for two polarizations, and the double refraction.

MAK, A. A., et al, Optiko-mekhanicheskaya promyshlennost', No. 9, Sep 71,
pp 42-45

A table is given showing the values of P , Q and W for the following types of glass: KGSS3, KGSS7, LGS24-5, LGS29-2, LGS36, KGSS56 and KGSS1621. It is noted that for laser applications one should use a glass with zero or fairly small values of the constants W , P and Q . Studies showed that the thermo-optical constant W of the glass changes considerably with the composition of the glass. Its values can be much less than zero, 0 and negative. The constant P should be highly dependent on the composition of the glasses and its value can vary from -1 to +1 to the fifth power, so that the majority of compositions of industrial glasses and neodymium glasses should be characterized by values of P considerably less than zero. The constant Q depends on the composition of the glass to a considerably less degree than P . In the majority of silicate and phosphate glasses the constant Q is small and does not exceed $0.1 \cdot 10^{-5} \text{ deg}^{-1}$. It is concluded that it is possible in principle to obtain glasses with small values of the thermo-optical constants W , P and Q .

USSR

UDC 666.112.92:546.18

SHCHAVELEV, O. S., Candidate of Sciences, BABKINA, V. A.

"Investigation of the Thermo-optical Constant W of Phosphate Glasses as a Function of Their Chemical Composition"

Leningrad, Optiko-mekhanicheskaya Promyshlennost', No 9, Sep 70, pp 43-46

Abstract: An experimental study is made of the effect which various components have on the thermo-optical constant W of five types of phosphate glass. A total of 28 different components were added in the five series of experiments. It is found that grades of glass with low thermo-optical constant and a variety of optical properties can be produced by combining phosphorus anhydride with components having positive and negative thermo-optical constants. Thus the results of these tests definitely show that a phosphate base is extremely promising for synthesis of glass with a low thermo-optical constant. The results of these experiments should be considered preliminary. A more thorough study must be made into the thermo-optical properties of specific 1/1 types of phosphate glass in this category.

USSR

UDC 621.3.052.95

KUTUKOV, L. V., MITROPANOVA, N. V., TIMOFEYEV, Yu. P., FRIDMAN, S. A., and SHCHAYENKO, V. V.

"Using Luminophores to Investigate the Heat in Electronic Circuits"

Moscow, Pribory i Tekhnika Eksperimenta, No. 3, 1971, pp 147-149

Abstract: Although infrared radiometry has been used for investigating thermal situations in electronic circuits, its results are not reliable. The purpose of this paper is to research further the recently applied luminophores for investigating temperature fields in electronic circuitry in printed circuit and integrated circuit form, a method free from many of the deficiencies involved in the use of infrared observations. The experiments described in this paper used as luminophores 5 μ -thick coatings of ZnS, CdS + Ag, and Ni crystal phosphors, which emit visible radiation when excited by ultraviolet light. The intensity of this visible radiation drops sharply with small increases in temperature. Also used were nichrome resistance films covered with a protective layer of SiO₂. Among other results they obtained, the authors find that this method is convenient for direct visual tests and checks of operating integrated circuits. Curves of the ZnS, CdS + Ag, Ni luminophore sensitivity as a function of the temperature are given. The authors are in the Moscow Physical Institute, Academy of Sciences, USSR.

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USSR

UDC 621.382.539.1.074

KORZYUK, T. G., OVECHKIN, V. V., PANSIN, A. Z., RAU, L. F., SMIRNOV, A. N.,
TAUBER, A. G., SHCHEBLOT, U. V., YUROVSKIY, A. V.

"Use of Thermoelectric Microrefrigerator for Cooling of Gamma-Spectrometric
Si(Li) Detectors"

V sb. Prikl. yadern. spektroskopiya (Applied Nuclear Spectroscopy --
Collection of Works), Issue 1, Moscow, Atomizdat, 1970, pp 223-232 (from
RZh--Elektronika i yeye primeneniye, No 5, May 1971, Abstract No 5B257)

Translation: The construction and production technology of Si(Li) Gamma
radiation detectors with a thickness of the sensitive region up to 10 mm
are described. The spectrometric properties are studied of such detectors,
which are cooled with the aid of thermoelectric microrefrigerators of
temperatures of minus 40°C. It is found that such cooled detectors make
it possible to realize an energy resolution of 1-1.8 percent for ^{137}Cs .
Several possible and promising uses in applied spectrometry of the de-
tectors described are shown.

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USSR

UDC 621.039.564.2(017)(083.76)

YARITSYNA, I. A., SHCHEBOLEV, V. T., FOMINYKH, V. I., and STUKOV, G. M.

"Primary Government Standard for Neutron Flux Units"

Moscow, Izmeritel'naya Tekhnika, No 8, 1972, pp 8-11

Abstract: Beginning with 1960, when the first designs for equipment based on the method of concomitant particles were developed, work has been carried on at the D. I. Mendeleyev VNIIM (All-Union Scientific Research Institute of Metrology) to set up a primary government standard for the unit of neutron flux. This standard, approved by the Committee on Standards on 13 May 1969, involves complex measurement methods using three standard devices: the UEN-1, UEN-2, and UEN-3. The basic theory of these devices is discussed and a photograph of the first instrument in an external view is reproduced. A comparison of the Soviet method with those of other nations, made in 1962-1964 using the Canadian Ra-Be (α, n) neutron source No 200-1, is described.

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USSR

UDC 621.375.82

AKHMANOV, S. A., DRABOVICH, K. N., SUKHORUKOV, A. P., SHCHEDNOVA, A. K.

"Combined Effects of Molecular Relaxation and Dispersion of the Medium in the Case of Induced Scattering of Supershort Light Pulses"

V sb. Nelineyn. protsessy v optike. (Nonlinear Processes in Optics--collection of works), Vyp. 2, Novosibirsk, 1972, pp 3-16 (from RZh-Fizika, No 12, Dec 72, Abstract No 12D865)

Translation: A theoretical analysis was made of the effect of the local non-stationarity and dispersion of a medium on the development of the pulse of the first Stokes component of induced Raman emission excited by picosecond pulses of laser radiation as a function of the relation between their duration and the longitudinal and transverse relaxation times of the medium. It is demonstrated that under conditions of group synchrony the pulse build-up coefficient of the first Stokes component can be reduced by comparison with the stationary value; in the case of strong nonstationarity, broadening of the spectrum is possible, and the phase modulation of the pumping radiation has no effect on the amplification. In media with anomalous dispersion in the case of inverse induced Raman emission the amplification saturation always takes place on a quasistationary length. The phase modulation of the pumping radiation in the dispersing medium can have a significant effect on the

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USSR

AKHMANOV, S. A., et al., Nelineyn. protsessy v optike. (Nonlinear Processes in Optics--collection of works), Vyp. 2, Novosibirsk, 1972, pp 3-16

amplification of the first Stokes component. In the absence of group synchrony and in the presence of inverse induced Raman emission, the formation of gigantic first Stokes component pulses is possible with a power exceeding its pumping power and a duration $\tau_c \approx 2T_2/\sqrt{\gamma_0\delta} - 1$, where T_2 is the transverse relaxation time, γ_0 is the stationary amplification coefficient, δ is the linear loss coefficient. The shift of the level populations in the medium was analyzed. Prospective problems were indicated for further study: in particular, consideration of non-uniform broadening of the levels, analysis of resonance induced Raman emission in equilibrium and excited media, and so on. The bibliography has 34 entries.

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USSR

AKHMANOV, S. A., DRABOVICH, K. N., SUKHORUKOV, A. P., and SHECHEDNOVA, A. K.,
Moscow State University imeni M. V. Lomonosov

"Combined Effects of Molecular Relaxation and Dispersion of Medium in Induced Raman Emission of Ultrashort Light Pulses"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 62, No 2, Feb 72, pp 525-540

Abstract: The article develops a consistent nonstationary theory for induced Raman emission (IRE) which simultaneously considers the effect of molecular relaxation and dispersion of the medium. Broad assumptions are made with respect to pumping modulation (a short rectangular and a bell-shaped pulse without phase modulation, continuous phase-modulated pumping, short pulses experiencing rapid phase modulation). Different relations between the group velocities of interacting waves are considered (forward scattering in the case of normal and anomalous dispersion, backscattering). The most interesting result of the authors' analysis is the fact that, under conditions when inertia of molecular vibrations and dispersion of the medium appear simultaneously, qualitatively new effects arise. The most important of these is the appearance of a mode of exponential amplification of Stokes radiation excited by pumping
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USSR

AKHMANOV, S. A., et al., Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 62, No 2, Feb 72, pp 525-540

pulses with a duration of $\tau_p < T_2$ at $z < L_v$, accompanied by stabilization of the Stokes pulse shape and width. Another important effect is the suppression of IRE as a result of rapid pumping phase modulation (at $\nu = 0$ phase modulation has practically no effect on Stokes amplification). There is competition between the effect of stationary mode formation and IRE suppression due to phase modulation. Estimates show that these effects play an important role in the IRE of picosecond pulses in liquids and crystals and IRE in self-focused beams. They may also appear in other types of stimulated scattering.

The theory developed can be used to analyze characteristics of higher Stokes and anti-Stokes components in nonstationary scattering. An interesting question is nonstationary scattering by polaritons. The use of the calculation method described enabled A. G. GOLGER to establish that the spectral line width of infrared vibrations under nonstationary conditions has the order of the corresponding spontaneous line width, regardless of the width of the pumping spectrum.

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USSR

UDC 621.375.826

SUKHORUKOV, A. P. and SHCHEDNOVA, A. K.

"Parametric Amplification of Light in the Field of a Phase-Modulated Laser Pulse"

V sb. Nelineyn. protsessy v optike (Nonlinear Processes in Optics — collection of works), Vyp.2, Novosibirsk, 1972, pp 17-26 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 D192)

Translation: None.

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USSR

UDC 621.385.6

VOLKOV, A.P., SHCHEDRIN, I.S.

"High-Frequency Field Of Iris Waveguide And Some Problems Of The Dynamics Of The Longitudinal Motion Of Electrons"

V sb. Uskoriteli (Accelerators--Collection Of Works), No 12, Moscow, Atomizdat, 1970, pp 105-110 (from RZh--Elektronika i yeye primeneniya, No 10, October 1970, Abstract No 10A24)

Translation: This paper is concerned with a thorough experimental investigation by means of measurements of the changes (modulation) of amplitude and phase of the longitudinal component of an electrical high-frequency field along the axis of the round iris waveguide of a linear accelerator. The results of the measurements are used for a calculation of the dynamics of the longitudinal motion of electrons in this waveguide. The nonresonant method of small perturbations is used during the measurements. The error of determination of the relative phase velocity from the measurements data ≤ 6 percent (can be reduced). Measurements were conducted at two sections of different waveguides with variable dimensions along the waveguide. The dependence is shown of the AM and FM high-frequency field along the axis of the waveguide, on the period of the waveguide structure, the mode of the oscillations which are used for acceleration, and the radius of the relative aperture of the iris. The calculations showed that taking account of the modulation and phase of the accelerating high-frequency field has a strong effect on the output spectrum of the accelerated electrons and on the part of the electrons captured in an acceleration regime. 7 ref. D.Ya.

1/1

= 290 -

1/2 011 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--PREPARATION OF SOME ALIPHATIC, ALPHA,OMEGA,DIOLS BY THE DESTRUCTIVE
HYDROGENATION OF POLYESTERS, INFLUENCE OF REACTION CONDITIONS ON THE
AUTHOR--(C3)-POLYAKOVA, S.G., SHCHEDRINA, M.M., BELOV, Y.N.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(5), 1144-8

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--HYDROGENATION, POLYESTER RESIN, CHLORINATED ORGANIC COMPOUND,
GLYCOL, ALIPHATIC ALCOHOL, CHEMICAL PRODUCT PRODUCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3004/1954

STEP NO--UR/0080/70/043/005/1144/1148

CIRC ACCESSION NO--AP0132215

UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NU--AP0132215

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE HYDROGENATION OF H₂O(CH SUB2) SUBN CG) SUBX OH (N IS 6, 8, OR 10) OVER CU-CR CATALYST (S. G. POLYAKOVA, 1964) GAVE HO(CH SUB2) SUBN PLUS 1, OH (1) IN SIMILAR TO 80PERCENT YIELDS. SIMILARLY, POLYESTERS OF OMEGA-CHLORO ACIDS WERE ALSO HYDROGENATED TO GLYCOLS. BESIDES 1 THE REACTION PRODUCTS CONTAINED N-ALCS. AND UNIDENTIFIED COMPS. THE HYDROGENATIONS WERE CARRIED OUT AT 220-300DEGREES AND 110-210 ATM. THE CONDITIONS WERE OPTIMIZED FOR THE INDIVIDUAL 1 PRODUCTION. FACILITY: VSES. NAUCH.-ISSLED. INST. SIN. NATUR. DUSHISTYKH VESHCHISTV, VORONTSOVO, USSR.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--THE MECHANISM OF ACTION OF RESERPINE ON THE HYPOPHYSIS ADRENAL
CORTX SYSTEM --U-
AUTHOR--SHEPHERINA, R.N.
COUNTRY OF INFO--USSR
SOURCE--BYULLETER EKSPERIMENTALNOY BIOLOGII I MEDITSINY, 1970, VOL 49,
NR 6, PP 60-63
DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ADRENAL GLAND, CATECHOLAMINE, ACTH, RESERPINE, SELECTIVE DRUG
EFFECT, NOREPINEPHRINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3004/0891

STEP NO--UR/0219/70/049/006/0060/0063

CIRC ACCESSION NO--AP0131290

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0151290

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN EXPERIMENTS WITH THE EMPLOYMENT OF RESERPINE THE AUTHOR INVESTIGATED THE PARTICIPATION OF CATECHOLAMINES IN THE REGULATION OF THE ADRENOCORTICOTROPIC FUNCTION OF THE HYPOPHYSIS.

ALTERATION OF THE ACTIVITY OF THE ADRENOCORTICOTROPIC FUNCTION OF THE HYPOPHYSIS IN RESPONSE TO STRESS IN RESERPINE TREATED RATS IS ONLY A FUNCTION OF REACTION MECHANISMS OF ADRENERGIC SUBSTANCES OF THE HYPOTHALAMUS. BASAL SECRETION OF ACTH FROM THE HYPOPHYSIS DOES NOT DEPEND UPON INCLUSION OF NORADRENALINE REACTION OF THE HYPOTHALAMUS. NORADRENALINE MAINLY EXERTS A REGULATING ACTION OF THE SECRETORY FUNCTION OF THE HYPOPHYSIS IN RESPONSE TO STRESS.

FACILITY:
INSTITUTE OF EXPERIMENTAL ENDOCRINOLOGY AND CHEMISTRY OF HORMONES OF THE ACADEMY OF MEDICAL SCIENCES OF THE USSR, MOSCOW.

UNCLASSIFIED

Acc. Nr: *AP0049048*

Ref. Code: *UR 0357*

PRIMARY SOURCE: Vestnik Oftal'mologii, 1970, Nr / ,
pp *58-60*

AN ABSCESS AT THE ROOT OF THE FRONTAL LOBE FOLLOWING
PENETRATING WOUND OF THE ORBIT

B. M. Nikiforov, S. M. Chutko, T. G. Shchedrina

Summary

A case of penetrating wound of the orbit with its osteal fragment entering the frontal lobe, followed by the development of an abscess and its successful surgical treatment, is reported. In the diagnosis of complicated penetrating wounds of the orbit roentgenological examination and cerebrospinal fluid findings obtained by an early lumbar puncture are of major importance.

111
REEL/FRAME
19800834

hdy 2

USSR

UDC: 621.398

MIKHAYLOV, I. I., TUPAS, V. I., STULOV, V. A., SECHEDROV, N. I.,
and PUKHOVICH, V. M. /Automation Institute/

"Frequency Selector Device"

USSR Author's Certificate No 299945, filed 8 Dec 69, published
27 May 71 (from *RZh-Avtomatika, telemekhanika i vychislitel'naya
tekhnika*, No 12, 1971, Abstract No 12A237P)

Translation: A frequency selector device contains an oscillatory circuit, a nonlinear frequency-dependent circuit, and a rectifier. It differs in that, with the purpose of providing band pass stability and a constant output signal level, the nonlinear frequency-dependent circuit is in the form of a series-connected differentiating and integrating RC network, while the differentiating circuit is connected with autotransformer coupling to the input of the oscillatory circuit, whose load is connected in series to the load of the rectifier for the voltage picked up from the secondary winding of the oscillatory circuit.

1/1

- 22 -

USSR

UDC: 621.396.662.4

MIKHAYLOV, I. I., TUPAS, V. I., STULOV, V. A., SHCHEDROV, N. I., PUKHOVICH, V. M., Institute of Automation

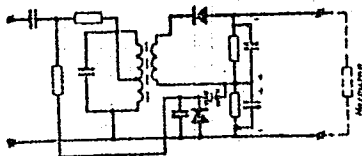
"A Frequency-Selective Device"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 12, Apr 71, Author's Certificate No 299945, Division H, filed 8 Dec 69, published 26 Mar 71, p 207

Translation: This Author's Certificate introduces a frequency-selective device which contains a tank circuit, a nonlinear frequency-dependent circuit and rectifiers. As a distinguishing feature of the patent, in order to stabilize the passband and make the output signal level constant, the nonlinear frequency-dependent circuit is made in the form of a differentiating RC network and an integrating RC network connected in series. The differentiating network is connected by autotransformer coupling to the input of the tank circuit, and the integrating network is connected to the input of a rectifier whose load is connected in series with the load of the rectifier for the voltage taken from the secondary winding of the tank circuit.

1/2

MIKHAYLOV, I. I., USSR Author's Certificate No 299945



2/2

- 45 -

Acc. Nr.:

AP0029802

Ref. Code: UR 0475

PRIMARY SOURCE: Vrachebnoye Delo, 1970, Nr 1, pp 55-58

EFFECT OF ANABOLIC HORMONES ON THE BLOOD SERUM PROTEIN
SPRECTRUM IN PATIENTS WITH GASTRIC AND DUODENAL ULCER

V. V. Shchedrunov (Leningrad)

A study of 204 patients with gastric and duodenal ulcer indicates that treatment with anabolic hormones (Nerobol and Melhylandrostendiol) was accompanied by an increase of the concentration of total protein by 4.6%, increase of albumines by 3.3%, increase of alpha-1, alpha-2, betha- and gammaglobulin fractions correspondingly by 9.7%, 6.3%, 6.7% and 10.1%. A statistically valid increase of the alpha-2-globulin concentration and a decrease of the blood serum gammaglobulin fraction was seen under the effect of anabolic hormones.

Anabolic hormones increase the efficiency of complex treatment: scarring of the ulcerous mucosal defect developed in 29 of 49 patients.

mk

REEL/FRAME

19681488

USSR

UDC 576.851.45.095

GURLEVA, G. G., DOMARADSKIY, I. V., KHALYAPINA, Ye. Ye., ALUTIN, I. M.,
TARANOVA, V. N., PUSHNITSA, N. P., KOL'TSOVA, Ye. G., MARCHENKOV, V. I.,
SHCHEGLAKOVA, N. M., and GRIGOR'YAN, E. G., Rostov-on-Don Scientific Research
Anti-plague Institute

"Biological Properties of Pasteurellae Isolated From Various Species of
Animals"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 11, 1971,
pp 54-58

Abstract: A comparative study was performed on *P. avicida*, *P. cuniculicida*,
B. avisepticus, *B. suis*, *B. bovis*, and *B. ovis* (a total
of 27 strains) isolated from chickens, pigs, suckling pigs, calves, steers,
sheep, house mice, and rabbits in various geographic areas in 1936-1967. The
tinctorial, cultural, morphological, and biochemical properties of these
strains as well as their sensitivity to antibiotics, nucleotide DNA compo-
sition, and virulence to albino mice, albino rats, and pigeons revealed that
they constitute a homogeneous group and belong to a single species -- *P.*
multocida. Significantly, all the strains investigated are sensitive to
colicines E+J, F, G, J+G, and S₅. If the findings are confirmed by supple-
mentary investigations, the colicin test may well be used for a differential
diagnosis of *P. multocida*.

1/1

- 81 -

1/2 009 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--MAIN TYPES OF TECTONIC MAGMATIC ACTIVATION REGIONS -U-
AUTHOR--SHCHEGLOV, A.O. S
COUNTRY OF INFO--USSR
SOURCE--SOV. GEOL. 1970, 13(3) 26-36
DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--TECTONICS, MAGMA, GEOSYNCLINE, EARTH CRUST

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1994/0046 STEP NO--UR/0215/70/013/003/0026/0036
CIRC ACCESSION NO--AP0114444
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0114444

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TWO MAIN TYPES OF TECTONIC MAGMATIC ACTIVATION REGIONS WERE SEPD.: (1) THOSE FORMED WITHIN CONSOLIDATED BORDERS OF GEOSYNCLINES BY TECTONIC PROCESSES WHICH OCCURRED IN THE GEOSYNCLINES (INDUCED ACTIVATION), AND (2) THOSE IN CONSOLIDATED STRUCTURES FORMED DURING THE CONTINENTAL STAGE OF THE EARTH'S CRUST DEVELOPMENT WITHOUT RELATION TO THE DEVELOPMENT OF GEOSYNCLINAL FOLDS (AUTONOMOUS ACTIVATION). THE REGIONS OF INDUCED ACTIVATION WERE SUBDIVIDED INTO ACTIVATED REGIONS OF GEOSYNCLINAL BORDERS CONTG. MAGMATIC FORMATIONS AND ENDOGENIC DEPOSITS SYNCHRONOUS AND SIMILAR WITH CORRESPONDING FORMATIONS GENERATED IN ADJACENT GEOSYNCLINES, AND ACTIVATED BORDERS OF GEOSYNCLINES CONTG. MAGMATIC FORMATIONS AND ENDOGENIC DEPOSITS UNKNOWN IN ADJACENT GEOSYNCLINES BUT SYNCHRONOUS WITH DEFINITE STAGES OF GEOSYNCLINAL DEVELOPMENT. THE REGIONS OF AUTONOMOUS ACTIVATION ARE INDEPENDENT GROUPS OF THE EARTH'S CRUST STRUCTURES WHICH FORMED IN RELATION TO A SPECIAL TYPE OF TECTONOSPHERE DEVELOPMENT DURING THE POST PLATFORM CONTINENTAL STAGE OF THE EARTH'S CRUST FORMATION. SIX TYPES, DIFFERING IN THE CHARACTER OF TECTONIC MAGMATIC DEVELOPMENT AND METALLOGENY WERE SEPD. FROM THESE REGIONS: (A) CONTINENTAL "VOLCANIC" DEPRESSIONS (1ST STAGE) AND COAL BEARING BASINS (2ND STAGE), (B) ONLY COAL BEARING DEPRESSIONS, (C) FRACTURE TYPE SUBVOLCANIC COMPLEXES, (D) LATE BASALT COVERS, (E) REJUVENATED ACIENT FRACTURES, AND (F) REJUVENATED ANCIENT FRACTURES WITH FURTHER DEVELOPMENT INTO HIGHER HORIZONS.

UNCLASSIFIED

USSR

UDC:621.762

BOROK, B. A., DZNELADZE, ZH. I., SHCHEGOLEVA, R. P., AKULOV, A. N., OSTROVSKAYA, E. N., GOLUBEVA, L. S., RABINOVICH, YE. M., CHERNOBYL'SKIY, I. G. and MARTIYNENKO, T. F., Central Scientific Research Institute for Ferrous Metallurgy imeni I. P. Bardin, Scientific Research Center for Electronic Computer Equipment

"Technology of Production of Permalloy-Type Alloys"

Kiev, Poroshkovaya Metallurgiya, No 12, Dec 73, pp 67-71

Abstract: A technology has been developed for producing magnetically soft permalloy (iron-nickel)-type alloys by powder metallurgy methods, achieving accuracies of reproduction of chemical composition of $\pm 0.3\%$ (in place of $\pm 0.5\%$), distinguished by low gas content, high homogeneity in microvolumes and zero magnetostriction. The possibility in principle of using sintered alloys for the manufacture of magnetic films in place of similar alloys produced by melting is established. The technology developed is used to create ternary and more complex alloys with high magnetic parameters, designed for the manufacture of magnetic film matrices for computer memory devices.

1/1

1/2 012
TITLE--ONCE MORE ON THE AGE OF FLUORITE DEPOSITS OF WEST TRANSBAIKALIA -U-
AUTHOR--ROZINOV, M.I., SHCHEGLOV, A.D. S
COUNTRY OF INFO--USSR
SOURCE--GEOLOGIYA I GEOFIZIKA, 1970, NR 3, PP 133-136
DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--FLUORITE, MINERALOGY, GEOLOGIC PROSPECTING, GEOPHYSICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1998/1272

STEP NO--UR/0210/70/000/003/0133/0136

CIRC ACCESSION NO--AP0106053
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--11SEP70

2/2 012

CIRC ACCESSION NO--AP0106053
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. AN ATTENTION IS PAID ON INADEQUATE
VALIDITY OF OPINIONS OF SOME INVESTIGATORS ON MIDDLE YURASSIC AGE OF
FLUORITE MINERALIZATION OF WEST TRANSBAIKALIA. THE DATA ARE LISTED ON
THE EARLY CRETACEOUS AGE OF THIS MINERALIZATION. THE SIGNIFICANCE OF
MORE PRECISIONALLY DETERMINED AGE OF MINERALIZATION FOR PROSPECTING
WITHIN THE REGION IS STRESSED.

UNCLASSIFIED

AA0046275

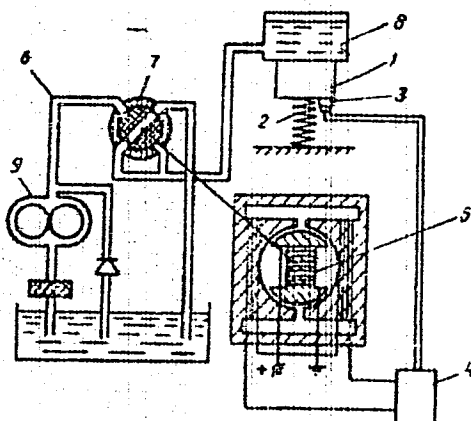
UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General,
Derwent, 2-70

243347 AUTOMATIC VIBRATION AND SHOCK ABSORBER
consists of an inertia mass 1 and
shock absorbers 2. In order to extend the
range of resonant frequency control, the inertia
mass can be altered by means of an electrohydraulic
system consisting of sensor 3, valve amplifier 4,
electromagnet 5, hydraulic drive 6 and control
sliding valve 7. When there is no vibration aff-
ecting mass 1, or when the dynamic loads are
below the pre-set level, the fluid from tank 8
is completely discharged through sliding valve 7.
If the load on the mass exceeds the set amount,
sensor 3 operates electromagnet 5 through
amplifier 4. The electromagnet causes the sliding
valve to close the channel to tank 8, and then
fluid from the constant-action pump 9 flows into
tank 8, alters the amount of the absorbing mass
and reduces the resonant frequency. 11.7.67. as
1171851/25-28. V.S. IL'INSKII. A.F. SHCHEGLOV.
(18.9.69.) Bul.16/5.5.69. Class 47A 11/16/69.

19781409

AA0046275



me

2/2

19781410

1/2 007 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--ON THE AGE OF ULTRABASIC INTRUSIONS OF THE WEST SAYAN AND TUVA -U-
AUTHOR--(02)-SHCHEGLOV, A.P., BOGNIBOVA, R.T.
COUNTRY OF INFO--USSR S
SOURCE--GEOLOGIYA I GEOFIZIKA, 1970, NR 2, PP 127-132
DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--EARTH CRUST AGE, ROCK, STRUCTURAL GEOLOGY

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1986/1230 STEP NO--UR/0210/70/000/002/0127/0132
CIRC ACCESSION NO--AP0103118
UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0103118

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. RECENT DATA ON THE STRUCTURE OF MIDDLE CAMBRIAN IN TUVA, NEAR SHAGONAR MOUNTAIN ARE LISTED IN THE PAPER. THE AGE OF ULTRABASIC INTRUSIONS IS REVISED. THE CLOSE RELATIONSHIP OF ULTRABASIC ROCKS WITH SEDIMENTS OF LOWER CAMBRIAN ALTYNBULAK ROCK SERIES AND THE PRESENCE OF ULTRABASIC ROCK PEBBLES IN BASAL CONGLOMERATES OF KARABULUN SUITE OF MIDDLE CAMBRIAN TESTIFY THE LOWER CAMBRIAN AGE OF ULTRABASIC INTRUSIONS.

UNCLASSIFIED

1/2 007

UNCLASSIFIED

PROCESSING DATE--18SEP70

TITLE--ON THE AGE OF ULTRABASIC INTRUSIONS OF THE WEST SAYAN AND TUVA -U-

AUTHOR--(02)-SHCHEGLOV, A.P., BOGNIBOVA, R.T.

COUNTRY OF INFO--USSR

SOURCE--GEOLOGIYA I GEOfIZIKA, 1970, NR 2, PP 127-132

DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--EARTH CRUST AGE, ROCK, STRUCTURAL GEOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAmE--1986/1230

STEP NO--UR/0210/70/000/002/0127/0132

CIRC ACCESSION NO--AP0103118

UNCLASSIFIED